

1 Phase Power supplies Q.PS-AD2-24xxF

Primary switched power supply

Thank you for having chosen one of our products for your work. We are certain that it will give the utmost satisfaction and be a notable help on the job.

Application

The power supplies Q.PS-AD2-24xxF can be used in areas with extreme industrial environment, and complies with the latest technical standard. Before working with the unit, read these instructions carefully and completely. All these power supplies are single output, IP20 and have Mounting DIN Rail IEC60715/TH35. Class 1 isolation devices suitable for SELV and PELV solutions.

Installation

WARNING!



Explosion Hazard! Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Explosion Hazard! Substitution of components may impair suitability for class I, Division 2. Switch off the system before connecting the module. Never work on the machine when it is live. The device must be installed in according with EN60950. The device must have a suitable isolating facility outside the power supply unit, via which can be switched to idle. Danger of fatal Injury!

Connection

The following cable cross-sections may be used:

	Solid (mm ²)	Stranded (mm ²)	AWG	Torque (Nm)	Stripping Length
Input	0.2÷2.5	0.2÷2.5	24 ... 14	0.5...0.6Nm	7 mm
Output	0.2÷2.5	0.2÷2.5	24 ... 14	0.5...0.6Nm	7 mm
Signal	0.2÷2.5	0.2÷2.5	24 ... 14	0.5...0.6Nm	7 mm

The connection is made by screw type 2.5 mm² terminal blocks. Use only copper cables that are designed for operating temperatures of >75 °C. Wiring terminals shall be marked to indicate the proper connection for the power supply.

Input: The input connection is made by L, N, ⊕.

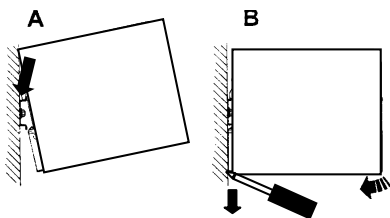
Output: 24 VDC is made via the + (+), - (-).

Signalling

Jumper Settings	Standard Conditions "LED VDC ok"	Overflow conditions "LED VDC ok"
MANUAL RESET		Switches off when there is an overload
HICCUP MODE	Lights up permanently when the output voltage is OK.	Blinks when there is an overload
CONTINUOUS OUT MODE		Switches off when there is an overload

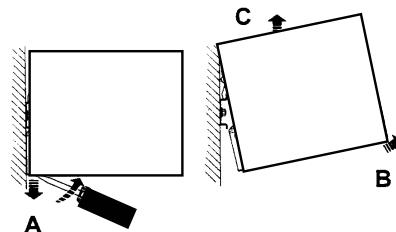
Rail Mounting

Mounting on the Rail



With **PLASTIC** Hook

Dismounting from the Rail



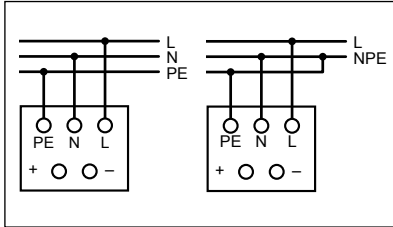
Other modules must have a minimum vertical distance of 10 cm to this power supply in order to guarantee sufficient auto convection. Depending on the ambient temperature and load of the device, the temperature of the housing can become very high!

Protection

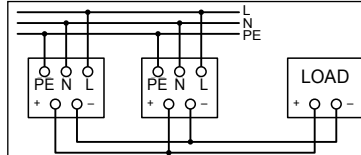
On the primary side: the device is equipped with an internally fuse. If the internal fuse is activated, it is most probable that there is a fault in the device. If happen, the device must be checked in the factory.

On the secondary side: the device is electrically protected against: Over-load, output over-voltage and short circuit automatically. It is not possible to set the overload mode on the Q.PS-AD2-2402F.

Connection



Parallel Connection for Increased capacity



With Q.PS-AD2-2410F
Change the jumper position to enable the
"Easy parallel connection"

Easy Parallel connection OFF
(factory selection)

Easy Parallel connection ON
Up to 4 power supply in parallel can
be put in this mode

With Q.PS-AD2-2402F and Q.PS-AD2-2405F

To result a good current share between all devices in parallel, adjust the output voltage in a tolerance of ± 20 mV. Therefore applying 1 ... 2 A load to adjust the output-voltage. Then connect them in parallel.

Use only power supplies of the same model.

Power Good Output Function (only on Q.PS-AD2-2405F and Q.PS-AD2-2410F)

The NC contact open any time the output voltage level goes below $20 \text{ VDC} \pm 5\%$. With this Power Good relay the output voltage can continuously be monitored. The maximum rates which can be switched are 30 VDC and 1 A.

Setting of the modes for Short Circuit an Over Load (not for Q.PS-AD2-2402F)

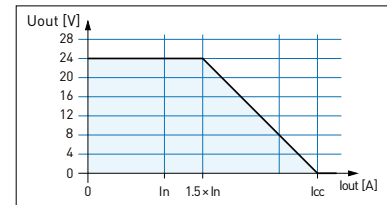
You must turn off the device before change settings.

- ▶ Jumper position in **MANUAL RESET** (Shut Down Mode): If Overload or Short Circuit happens, the output turns off. To restart the power supply it is necessary to turn off mains input for a few seconds. This protection mode is particularly suggested in applications where safety procedures require that a reset can be carried out only by an authorized person.
- ▶ Jumper in **HICCUP MODE** (Auto-Reset): In case of short-circuit or overloading, the output current is interrupted. The device tries again to re-establish the output voltage every 2 second till the problem is cleared. (default factory jumper setting)
- ▶ Jumper position in **CONTINUOUS OUT MODE**: If you need a constant power on your load, select this mode. The output power don't switch off. This protection mode is used to meet the requirements of demanding loads such as motors, solenoid valves, lamps, PLC with highly capacitive input circuits and other loads with transient behaviour.

Characteristic Curves

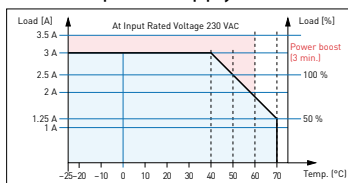
Short circuit and overload

The output of the device is electrically protected against overload and short circuit. At nominal voltage the device can supply 1.5 the nominal Current without switching off. In the case of higher overload, the operating point traces the curve illustrated in figure. As the overload increases, the output vnlage is reduced until zero.

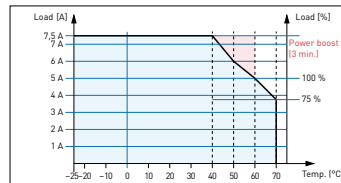


Thermal behaviour

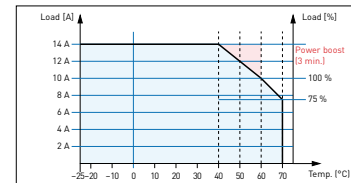
The rated maximal air temperature @ nominal current is 60°C (the Q.PS-AD2-2402F 50°C). For ambient temperature above 60°C , the output current must be reduced by 2.5% per Kelvin increase in temperature. At the temperature of 70°C , the output current will be $3/4 \times I_n$ (by the Q.PS-AD2-2402F $I_n/2$). The equipment does not switch off in case of ambient temperature up to 70°C or thermal overload. The devices are protected for excess temperature conditions. In conditions where the power-supply inside temperature is over 70°C will the device shut-down the output and will be automatically restarted when the temperature inside the power-supply is decreased.



Q.PS-AD2-2402F



Q.PS-AD2-2405F



Q.PS-AD2-2410F

Standards and Certification

Electrical Safety:

Assembling device: UL508, IEC/EN60950 (VDE0805) and EN50178 (VDE0160)

Isolation according: IEC/EN60950

Input/Output separation: SELV EN60095-1 and PELV EN60204-1. Double or reinforced insulation

EMC Standards (Surge, Transient Immunity):

Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-6-2

Emmission: EN61000-6-4, EN61000-3-2

Standards Conformity:

Safety of Electrical Equipment Machines: EN60204-1.



In according to EMC2004/108/EC and EMC93/68/EEC
Low voltage directive 2006/95/E



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